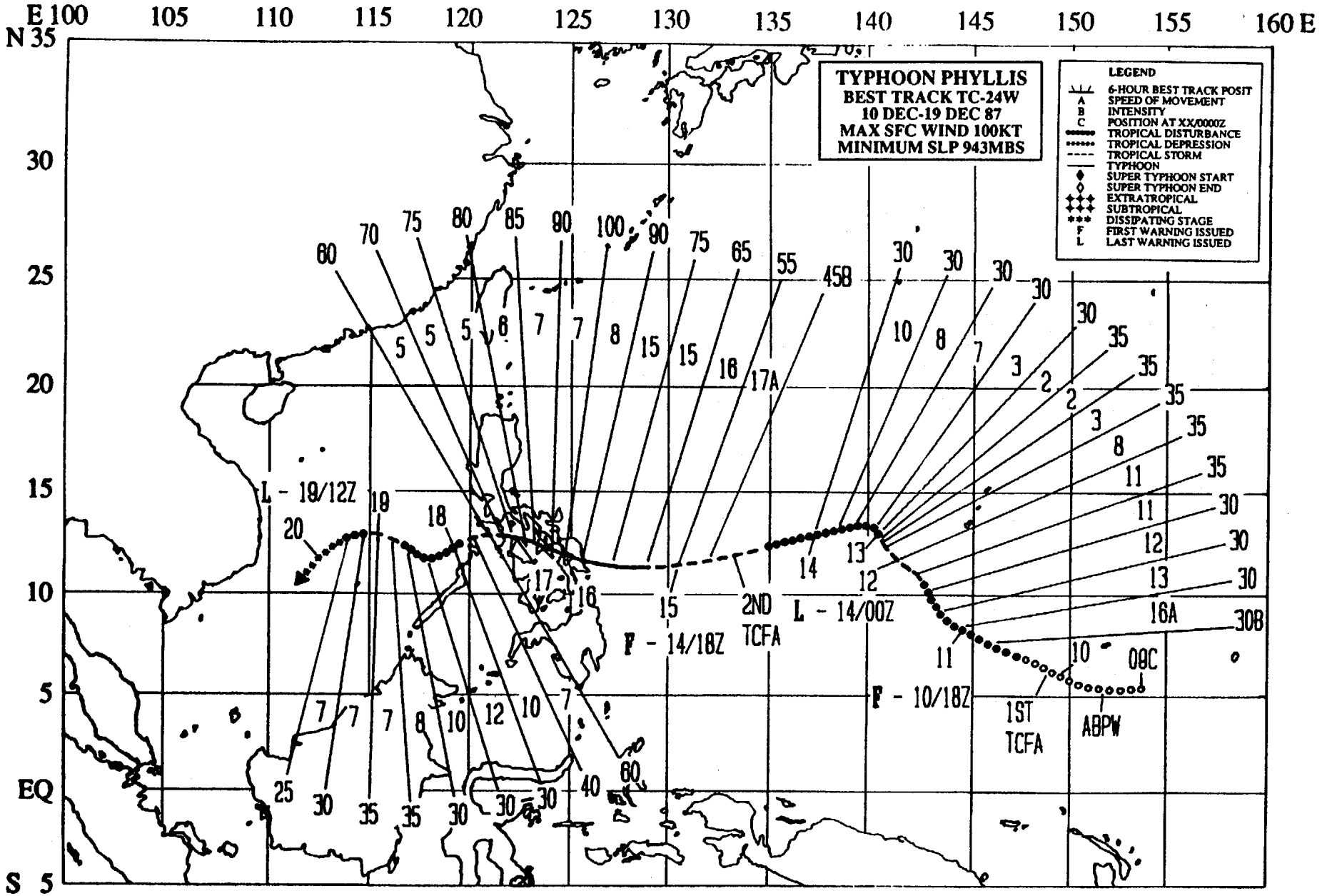
TYPHOON PHYLLIS
BEST TRACK TC-24W
10 DEC-19 DEC 87
MAX SFC WIND 100KT
MINIMUM SLP 943MBS
LEGEND
6-HOUR BEST TRACK POSIT
SPEED OF MOVEMENT
INTENSITY
POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
E 100
105
110
115
120
125
130
135
140
145
150
155
160 E
N 35
30
25
20
15
10
5
EQ
S 5
L - 19/12Z
F - 14/18Z
2ND TCFA
L - 14/00Z
F - 10/18Z
1ST TCFA
ABPW
08C

TROPICAL STORM PHYLLIS (24W)

Typhoon Phyllis was the only significant tropical cyclone to develop in the western North Pacific in December and the third to regenerate over water in 1987 (reference Tropical Storms Ed (12W) and Maury (21W)). It struck the central Philippine Islands three weeks after Super Typhoon Nina (22W) and added further misery to that ravaged nation.

Phyllis began as an area of weakly organized convection in the eastern Caroline Islands 150 nm (278 km) southeast of the Truk Atoll. It was mentioned for the first time on the 091030Z December Significant Tropical Weather Advisory (ABPW PGTW) after exhibiting a rapid increase in the amount and organization of convection. The potential development was listed as fair due to the pre-existence of a low-level circulation and unrestricted upper-level outflow.

A Tropical Cyclone Formation Alert (TCFA) was issued the next day at 100230Z when a satellite intensity estimate (Dvorak, 1984) indicated 25 kt (13 m/sec) winds at the surface. The first warning, on Tropical Depression 24W, came at 101800Z as the estimate of the surface winds increased to 30 kt (15 m/sec) and the associated deep convection became more centralized. At that time, Tropical

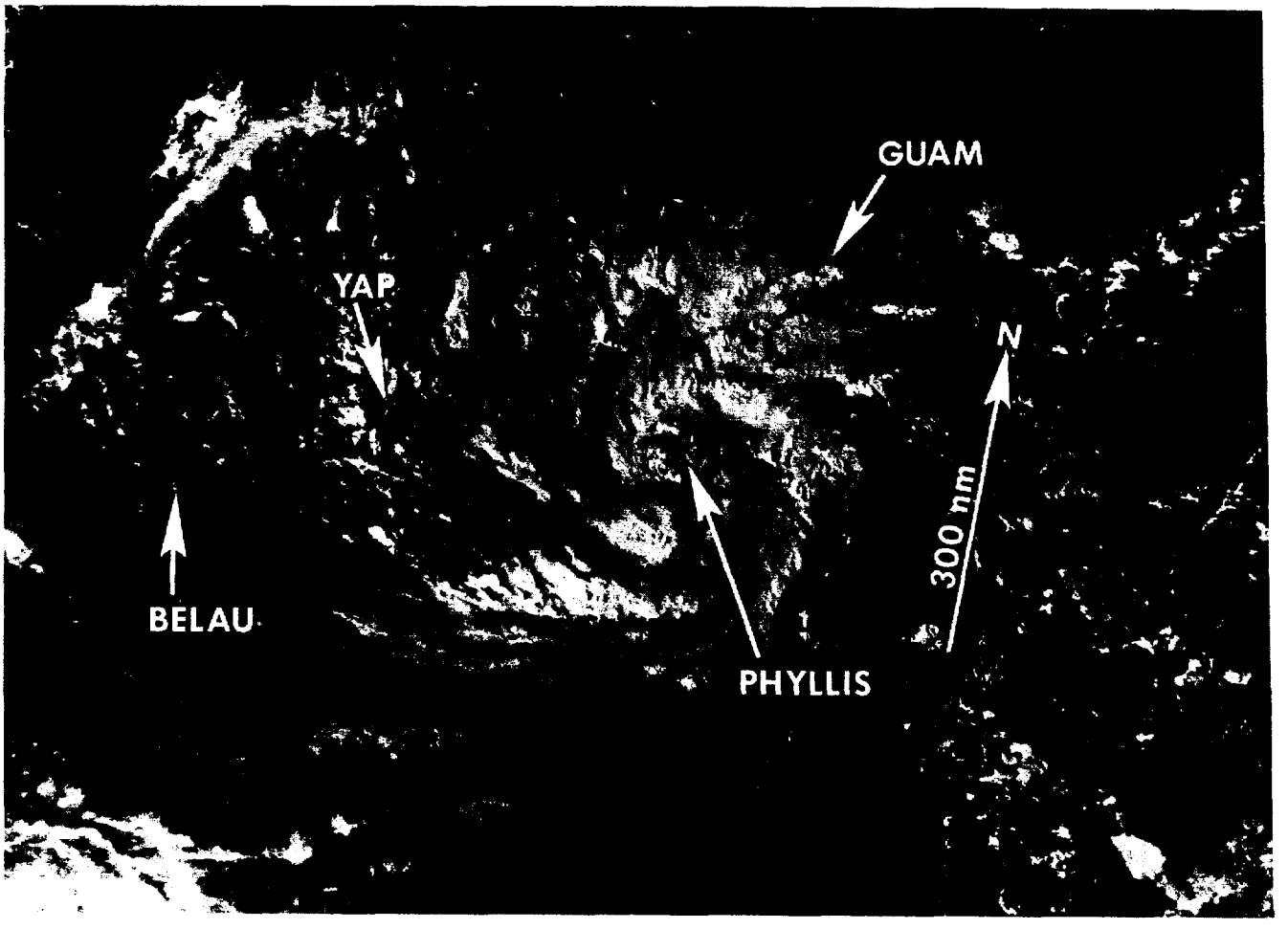

Figure 3-24-1. The well-defined, low-level circulation center of Tropical Depression 24W is revealed by the spiral convective bands of cloudiness (110547Z December NOAA visual imagery).

Depression 24W was located 370 nm (685 km) south-southeast of Guam and was moving toward the northwest. Twenty-four hours later, it made its closest point of approach to Guam (210 nm (389 km) to the southwest) and was upgraded to a tropical storm based on the development of a large cloud system and improved upper-level outflow in the southwest quadrant (see Figure 3-24-1). Early dissipation was forecast (beginning with the third warning at 110600Z). The approach of an eastward-moving, mid-latitude trough would increase the vertical wind shear. As the short wave moved eastward from mainland China, Phyllis slowed its forward motion until 130600Z, then abruptly changed course and accelerated toward the west-southwest. After downgrading the tropical cyclone to a tropical depression at 130000Z, the final warning followed at 140000Z. The displacement of central convection to the northeast of the low-level circulation center and the entrainment of cooler, drier air appeared to have started an irreversible weakening process.

However, within 18-hours (once the vertical wind shear decreased), Phyllis began to reestablish its central convection under a favorable upper-level outflow pattern. This

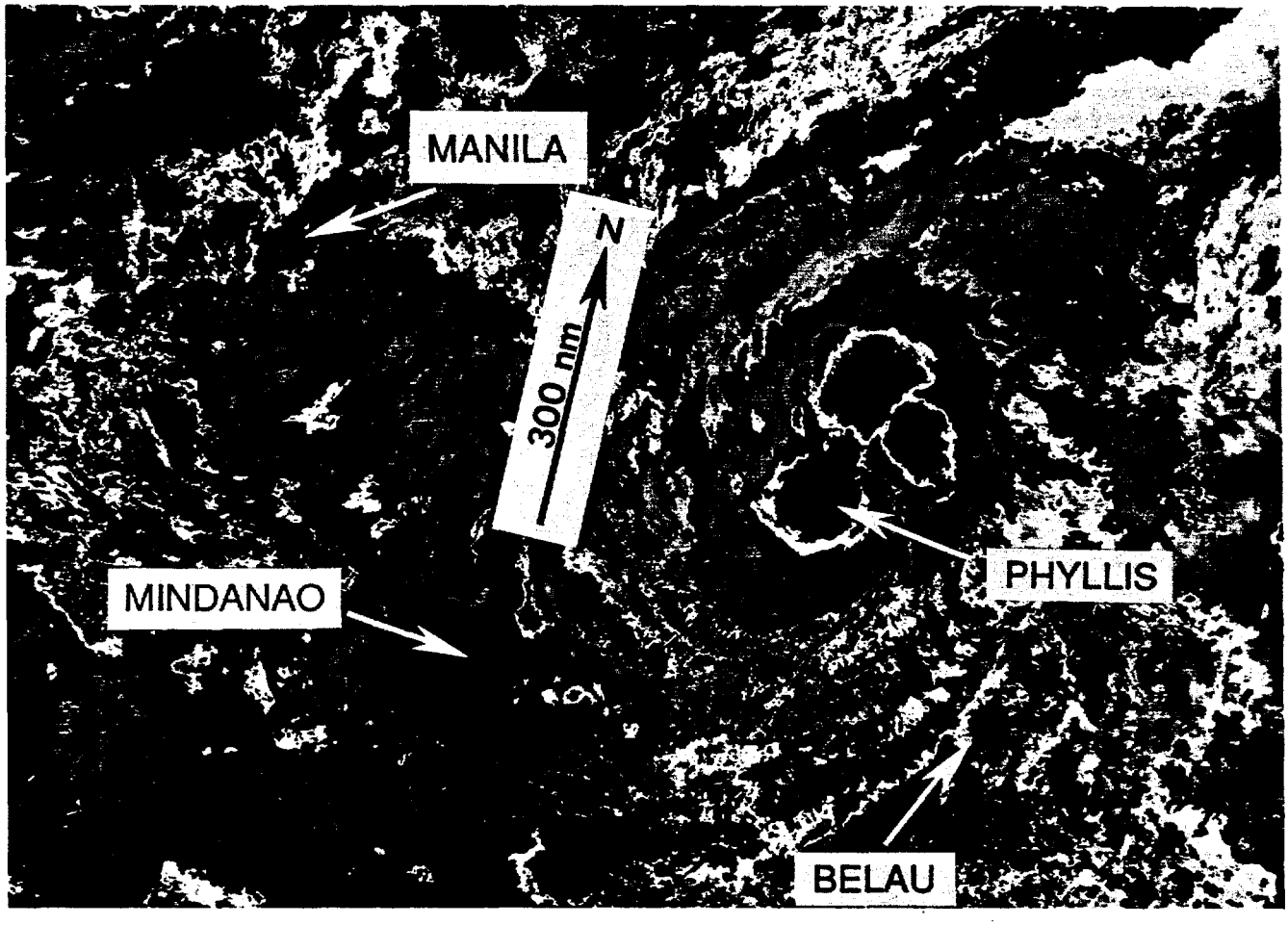

Figure 3-24-2. Tropical Storm Phyllis shortly after regeneration (142136Z December DMSP infrared imagery).

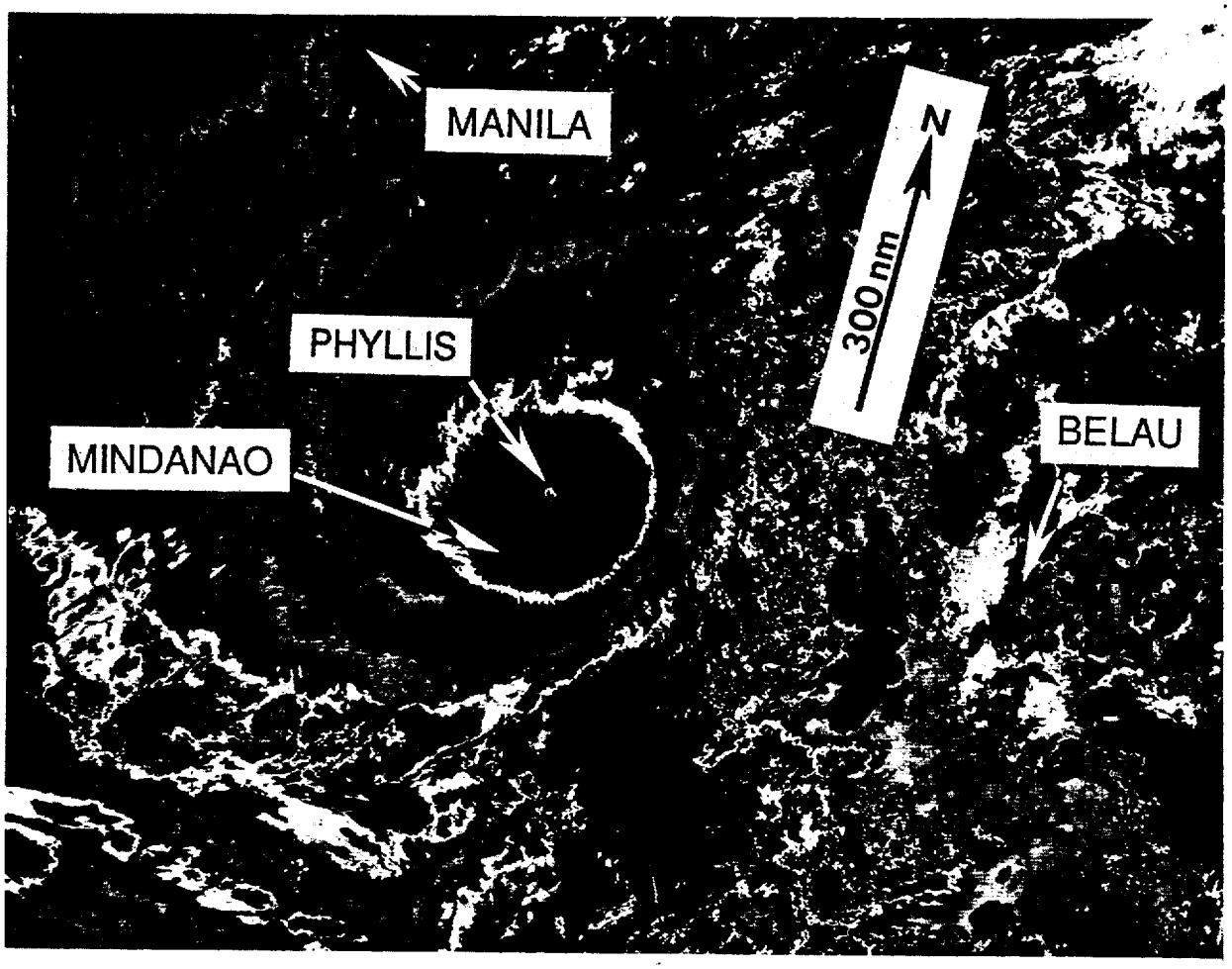

Figure 3-24-3. Tightly wrapped, small eye of Typhoon Phyllis during landfall on the island of Samar (152123Z December DMSP infrared imagery).

resulted in the issuance of a second TCFA at 141630Z. The (first regenerated) warning followed at 141800Z (as warning number 15 on the system) based on the satellite intensity estimate of 45 kt (23 m/sec) (see Figure 3-24-2). Intensification continued until 150000Z when Phyllis peaked at 100 kt (51 m/sec) while making landfall on the island of Samar in the central Philippine Islands (Figure 3-24-3). Phyllis left ten people dead and thirteen more were listed as missing when a ferry boat sank off of northern Samar.

After peaking, Phyllis weakened slowly for 24-hours while traversing the central Philippine Islands. Weakened by the frictional effects of the surrounding mountainous island terrain, Phyllis entered the South China Sea and was downgraded to a tropical depression at 180000Z. The forecast to dissipate within 48-hours over water was basically correct, however, the tropical cyclone did briefly reintensify to 35 kt (18 m/sec) on the 19th. No other reports of deaths or serious damage were received.